

SELECTED COMMUNICABLE DISEASES

The following information has been included as resource guidelines for school districts in the development of their policies and procedures of health services.

Bites: Animal and Human

Physical Findings:

- Complaints of pain and bleeding
- The puncture wounds and/or lacerations are usually jagged
- With severe bites, pieces of tissue may be torn away.

Rabies Prophylaxis:

Bites that are unprovoked bites (especially from a dog) raise greater suspicion than if an animal is provoked or teased. The biting animal must be confined and observed 10 days; notify the health department or police of the animal bite. If the animal cannot be apprehended then rabies shots may need to be given.

Common carriers of rabies are dogs, cats, foxes, skunks, bats and raccoons. Bats carry rabies but only bite when handled. Children who touch a dead or sick bat are at small risk, but a doctor and public health department should be notified. Bites on fingers and face are more dangerous.

Prevention of Infection:

1. Open, jagged lacerations may be thoroughly irrigated and have a low infection rate. Usually no prophylactic antibiotics are required.
2. Cat bites are usually deep puncture wounds and have a high infection rate. They often require prophylactic antibiotics.
3. Human bites that break the skin have the greatest potential for infection. Transmission of Hepatitis B to both students should also be considered (consult current AAP Redbook).

Prevention of Tetanus:

Verify immunization status with student's healthcare provider. If the healthcare provider is unavailable, follow general guidelines.

1. If the student has no previous active immunization with tetanus toxoid, encourage tetanus immune globulin plus begin series of tetanus toxoid.
2. If active immunization is 10 years ago or longer: Booster of tetanus toxoid (adult Td).
3. If active immunization is within the past five years: For mild bite-no booster. For severe bite-adult Td booster.
4. Severe, neglected, bites over 24 hours old or dirty bites-Adult Td, unless person has had one in the previous 12 months.

Management

1. Wash and irrigate with copious amounts of soap and water.
2. Apply loose dressing.
3. Topical antibiotics may be applied if approved.
4. Refer all but most minor bites (skin not broken) to physician. Record date of last tetanus.
5. Notify student's parents of incident and treatment received. ⁽⁸⁾

Common Childhood Diseases Associated with Rash

For a description of common childhood diseases associated with a rash, such as: Rubeola (Measles), Rubella (German Measles), Roseola, Fifth Disease, Scarlet Fever, Scarletina and Varicella (Chicken Pox), see [Exhibit 5B](#).
(1)

Conjunctivitis (Pink Eye)

Definition:

Inflammation and /or infection of the conjunctiva (mucous membrane lining of the eye) Causes:

Allergens, irritants (e.g. foreign object, dust, smoke), bacterial (staphylococcal, streptococcal, haemophilus) or viral (usually adenovirus, but also herpes simplex) infections.

Common Physical Findings:

1. Redness of sclera
2. Purulent or watery discharge
3. Itchiness: student rubs eye(s) frequently
4. Eyelids may be reddened and/or swollen
5. Crusts in inner corner of eyes, especially after sleep

Physical Findings That Help Differentiate Cause:

1. Allergic: discharge remains watery, occurs bilaterally.
2. Bacterial (the most common cause of “pink eye”): purulent drainage (thick, yellow to green-yellow) and more crusting during sleep; usually begins in one eye and is spread to the other eye by hand (through rubbing), contaminated eye mascara, etc. This is contagious but usually less easily transmitted to others than viral.
3. Viral: usually less severe, watery discharge but may be thick and white to pale yellow; lasts 3-5 days. This is highly contagious but does not require antibiotics. All three types of conjunctivitis may occur with the common cold.

Management:

1. Exclusion from school: School policy should direct personnel to refer ALL cases for medical evaluation. The registered nurse may choose not to exclude those whose conjunctivitis is mild or associated with a cold or allergy. The student’s health care provider may prescribe antibiotic drops or ointment. Students may return to school when treatment has begun.
2. Discourage home treatment with old ointment or steroid drops.
3. For mild allergic or viral conjunctivitis, over-the-counter drops may be used for comfort. The student’s healthcare provider may order topical anti-inflammatory drops for significant allergic conjunctivitis.
4. Apply cool compresses for temporary relief
5. Check visual acuity; it should be unchanged from the student’s usual acuity.
6. Check the student’s fingers and nose for impetigo. Review hand washing and other measures to prevent spread of infection.
7. Refer any case with subconjunctival hemorrhage to the student’s physician.

Follow up:

Educate the student about hand washing, keeping fingers/hands away from eyes, and not to share face washcloths or eye makeup. Unused eye makeup should be discarded.
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Fever

Fever is a physiological response to an inflammatory or infectious process. Reasons to reduce a fever are to make the child more comfortable, or to prevent seizures in the very young child.

Description of Fever

Oral or rectal temperature of 100.4 degrees F or higher.

In most mild childhood illnesses, fever is lowest in the morning, rises in afternoon, highest in evening and night. As child begins to recover, morning temperature will be normal with fever occurring later in day.

When Should A Student Return To School After a Mild, Febrile Illness?

1. A student should remain home until they have been afebrile 24 hours after their last temperature was 101 degrees or higher. The student should be kept home one more day, even if no fever that morning.
2. If the student appears to be improving, with the highest fever less than 101 degrees the previous day, student may return if they feel good that morning, and their appetite is good.
3. Students with a fever one day who wake up the following morning normal and with good appetite may return to school. They should be seen by nurse at end of day (unless they feel ill sooner).
4. Other symptoms to consider: cough, nasal congestion, stomachache, vomiting, or diarrhea. If present, to a significant degree, advise remaining at home additional day.

Management:

1. A cool compress applied to the forehead may make the student more comfortable. Remove extra outer clothing. Encourage the student to drink plenty of fluids.
2. Follow Doctor's instructions. Conservative parents may choose to keep child home an extra day.
3. Follow your school policy regarding OTC medications.
4. First day back at school, student should not participate in strenuous physical activity or athletic competition.⁽⁸⁾

Head Lice (Pediculosis capitis)

The following information on head lice is taken from the American Academy of Pediatrics Clinical Report on Head Lice, September 2002. The complete report is available online at <http://www.aap.org/policy/0203.html>.

Head lice infestation is common in the United States among children 3 to 12 years of age. Head lice are not a health hazard or a sign of uncleanliness and are not responsible for the spread of any disease. Head lice are small parasitic insects that live on the scalp and neck hairs of human hosts. Lice cannot fly or jump and are transmitted by direct head-to-head contact with an infested individual. The most common symptom is itching. Individuals with head lice infestation may scratch the scalp to alleviate itching, and there rarely may be secondary bacterial skin infection. Head lice are the cause of much embarrassment and misunderstanding, and many unnecessary days lost from school and work.

School Control Measures

Screening for nits alone is not an accurate way of predicting which children will become infested, and screening for live lice has not been proven to have a significant effect on the incidence of head lice in a school community over time. Neither has such screening proven to be cost effective. The American Academy of Pediatrics Clinical Report on Head Lice encourages the school nurse or other trained persons to check a student's head if he or she is demonstrating symptoms, otherwise, classroom or school-wide screening should be strongly discouraged. The report goes on to say that it would be prudent to periodically provide information to families of all children on the diagnosis, treatment, and prevention of head lice. Parents should be encouraged to check their children's heads for lice if symptomatic; school screenings do not take the place of these more careful checks.

Management on the Day of Diagnosis

Because a child with an active head lice infestation has likely had the infestation for a month or more by the time it is discovered, poses little risk to others, and does not have a resulting health problem, he or she should remain in class but be discouraged from close direct head contact with others. If a child is assessed as having head lice, confidentiality must be maintained so the child is not embarrassed. The child's parent or guardian should be notified that day by telephone or a note sent home with the child at the end of the school day stating that prompt, proper treatment of this condition is in the best interest of the child and his or her classmates. Common sense should prevail when deciding how "contagious" an individual child may be (a child with hundreds versus a child with 2 live lice). It may be prudent to check other children who were most likely to have had direct head-to-head contact with the index child. (The index child is the one who has been found with active head lice infestation) In an elementary school, often the most efficient way to deal with the problem is to notify the parents or guardians of all children in the index child's classroom, encouraging that all children be checked at home and treated if appropriate before returning to school the next day.

Treatment Recommendations

Permethrin 1% (Nix) is currently the recommended treatment for head lice, with retreatment in 7-10 days if live lice are seen. Instructions on proper use of products should be carefully relayed. Safety and efficacy should be taken into account when recommending any product for treatment of head lice infestation. None of the currently available pediculicides are 100% ovicidal and resistance has been reported with lindane, pyrethrins, and permethrin. Bed linen should also be laundered. Treatment failure does not equate with resistance, and most instances of such failure represent misdiagnosis/misidentification or noncompliance with the treatment regimen.
(9)

It is important to remember that proper education of students, parents, school and healthcare personnel is essential for controlling the spread of head lice.

Hepatitis

Hepatitis is a virus causing inflammation of the liver. The most common types of hepatitis are Hepatitis A (HAV), Hepatitis B (HBV) or Hepatitis C (HCV). See [Exhibit 5C](#) for description and treatment of each type of hepatitis.
(4)

Impetigo

Definition:

A highly contagious, superficial, bacterial skin infection that may be spread by direct contact or by objects contaminated with drainage.

Cause:

Primarily by strains of *Staphylococcus aureus* and/or Group A *Streptococci*. Transmitted through direct contact.

Signs/Symptoms

1. Incubation period is 2 to 5 days. Transmission of disease lasts until the lesions are dry.
2. Lesions progress rapidly from macules to vesicles (approximately 1-2 mm) to pustules.
3. Upon rupture, pustules produce a sticky, honey-colored crust.
4. Most frequently found on fingers and face, but may occur anywhere on body
5. Multiple lesions are usually present
6. Student complains of itching.
7. Impetigo may develop as a secondary infection to insect bites, abrasions, chickenpox, scabies, burns, and any break in the skin.

Management:

1. Good hand washing by teachers and children minimizes the transmission of impetigo from one child to another.
2. Gently wash with soap to remove crusts. (Bacteria live under the crusts)
3. Apply direct pressure to control any bleeding under removed crusts. Follow student's healthcare providers' instructions. Apply approved or individually prescribed antibacterial ointment.
4. Oral antibiotics may be prescribed for moderate to severe cases.
5. Cover with loose clean dressing.
6. Exclusion from school depends on student's age, the ability to practice good personal hygiene, if treatment is ongoing and lesions are lightly covered while in school. Children with multiple or very large impetigo lesions may need to be excluded for at least 24 hours after treatment begins if they are very young or significantly developmentally delayed and unable to keep the area covered or if there is a great deal of skin to skin contact between them and other children.
7. Instruct student to clean fingernails well and to keep fingernails short.

Follow Up:

1. Monitor daily for continued healing process.
2. Refer student for additional treatment if cellulites, boils or fever develop.
3. Chronic infection may be the result of nasal carriage of staphylococcus. Recommend that the student or family member receive a nasal culture for repeated episodes.
4. To reduce the risk of disease or spread of infection, instruct classes on hand washing, including fingernails.⁽⁸⁾

Meningitis

Meningitis is an infection of the membranes covering the spinal cord and the brain. The most common causes of meningitis include a variety of organisms such as viruses, bacteria, fungi, mycoplasma, and parasites. Aseptic or viral meningitis (meningoencephalitis) is an acute inflammation of the meninges that may or may not involve parts of the brain as well. Viral meningitis is milder and occurs more often than bacterial meningitis. Although the most common causative agents are enteroviruses, in the majority of cases no cause is determined. Severity of symptoms is determined by the extent of tissue involvement.

Common signs and symptoms:

1. Fever and chills
2. Headache, severe
3. Nausea and vomiting
4. Stiff neck (in small children, severe neck stiffness ultimately results in a characteristic arched posture)
5. Sensitivity to light (photophobia)
6. Mental status changes
7. Consciousness, decreased
8. Rapid breathing
9. Agitation/irritability
10. Poor feeding

Onset is usually gradual and may be preceded by a nonspecific febrile illness. Stupor and seizures may be noted with high fever. Patients should be hospitalized and treated with antibiotics until a bacterial or other cause is ruled out. Treatment of aseptic meningitis is symptomatic and includes antipyretics and analgesics. Intravenous fluids may be necessary in cases of anorexia or vomiting.

Bacterial meningitis is a true medical emergency and one of the most potentially dangerous infections in children. The most common causative organisms in children 2 months to 12 years of age are *S. pneumoniae*, *N. meningitidis*, and *H. influenzae* type b. Onset of symptoms is usually gradual and may be preceded by several days of upper respiratory symptoms. Increased lethargy and irritability follow. Diagnosis is made by analysis of CSF. Patients should be hospitalized for intravenous antibiotics and close monitoring of neurological status.

The bacteria causing meningitis are passed between people who are in close contact through coughing, sneezing, nasal discharge, saliva, and touching of infected secretions. It can be spread by sharing eating utensils, drinking cups, water bottles, and kissing. While household contacts are at the highest risk of contracting this illness, others sharing these exposures are at risk as well.

Infection control guidelines:

1. The best way to prevent spread of meningitis is to alert everyone that a case has occurred so that appropriate preventive treatment can begin.
2. Instruct all exposed staff and parents of the exposed student to contact their health care providers immediately.
3. Anyone having close contact with the diagnosed person (e.g., household members and friends sharing eating and drinking utensils, sharing water bottles, or kissing) in the 2 weeks prior to the onset of symptoms should take prophylactic antibiotics, to lower the risk of the spread of the disease. Treatment of all close contacts should be done within the first 2 weeks of diagnosis of the first case, but preferably as soon as possible within the first 24 hours. Deciding who is a close contact can be established by consulting with the school nurse, school physician, and/or local board of health.
4. Inform patients and staff that antibiotics do not provide absolute protection against disease. Therefore, any student or adult who develops symptoms such as fever or headache requires prompt evaluation by a health care provider.
5. Monitor the situation closely for 2 to 3 weeks. Make sure all ill students and staff are seen by their physicians and that the school is notified if another person develops meningitis. Be sure that the parents of any student who is enrolled during this period are informed about the risks so that they may take appropriate precautions.⁽⁴⁾

SARS

Severe acute respiratory syndrome (SARS) is a viral respiratory illness. SARS was first reported in Asia in February 2003. Over the next few months, the illness spread to more than to a dozen countries in North America, South America, Europe and Asia.

Most patients with SARS, in the United States were exposed through foreign travel to countries with community transmission of SARS, with only limited secondary spread to close contacts such as family members and health-care workers. Casual contact with a SARS patient at schools, other institutions, or public gatherings (e.g. attending the same class or public gathering) has not resulted in documented transmission in the United States. However, management of students exposed (i.e. through foreign travel or close contact) to SARS patients is a concern. See [Exhibit 5D](#) for the CDC's Guidelines and Recommendations to assist schools and local health departments in the management of exposed students.⁽¹⁰⁾

Scabies

Definition: A highly pruritic, communicable skin infection caused by a very tiny mite (*Sarcoptes scabiei*) that burrows under the skin. The mite lays eggs which mature in 21 days. Transmitted by direct or indirect contact of infected clothing or linens.

Signs and Symptoms:

- 1 Typical lesion (burrow) is a tiny, line resembling a pencil mark, which shows the path of the mite. Mite may appear as a tiny black dot at the end of the line.
- 2 Rash: tiny (1-2mm)
- 3 Location: back of hands, web of fingers, front of forearms, lower abdomen, chest, axilla, around flexor folds or clothing lines. Less common on lower legs. Rarely seen on face, midback, palms, and soles (a good diagnostic clue).
- 4 Intense itching, due to an allergic response to the mite.
- 5 Impetigo may occur as a secondary infection due to scratching.
- 6 Itching may persist after treatment begins but should decrease as treatment continues.
- 7 Diagnostic hints: Color suspected burrow and surrounding skin with purple felt marker and wipe off with alcohol. Burrow will be outlined in purple.

Treatment:

- 1 Objective is to eliminate the infestation. Prescription creams and lotions are applied all over the body (avoid the face).
- 2 The most common prescription cream is Elimite (permethrin). In severe cases, an oral antibiotic may be prescribed (ivermectin).
- 3 It may be necessary to treat entire family or persons who have had close contact with the infected student.
- 4 Instruct parent to wash clothes and bed linen at 120 degrees F or hotter.

Follow-up:

- 1 Assess each day or two after first treatment.
- 2 Watch for new lesions. A second treatment may be necessary.
- 3 Watch for secondary infection and refer accordingly.
- 4 Check siblings in school.
- 5 Educate staff about scabies and transmission ⁽⁸⁾.
- 6 Burrows may remain for up to 1 month.

Sore Throat (including Streptococcal Infection)

Cause:

Very common in children between ages 5-10 years old. Most commonly caused by a virus that will not respond to antibiotics. Strep throats are the most common bacterial cause of sore throats. (A toxin produced by these bacteria is responsible for the typical rash illness called Scarlet fever or Scarlatina.) Other causes of a sore throat include irritation from air pollution, allergens or sinus drainage. Laboratory tests are used to distinguish between viral and strep throat.

Management of Minor Afebrile Sore Throat

- 1 Time is the most important healer for sore throat pain. If caused by a virus, it will disappear on its own.
- 2 Cold liquids and over-the-counter pain medication to treat the pain. (Aspirin should not be given to children under 15 years old for risk of Reye's syndrome)
- 3 Warm, salty (1/2 teaspoon to 1 glass water) gargles
- 4 Warm fluids (broth; honey or lemon tea, or warm lemonade)
- 5 Over-the-counter lozenges or analgesic sprays (some do not advise lozenges or drops at school for safety reasons).

Physical Findings of Strep Throat

1. Sudden onset of sore throat
2. Fever (greater than 101 degrees Fahrenheit)
3. Headache and stomach pain
4. Marked inflammation of throat and tonsils; white draining patches from the tonsils

Unique Findings of Scarlet Fever:

1. Diffuse redness of cheeks and upper chest on “goose flesh” skin, the sensation of fine sandpaper.
2. The rash spreads and, in 5-10 days, skin peels. Most cases are mild, lasting a few days, but severe cases occur.
3. Two major complications: acute rheumatic fever (joints, heart) occurs in 1% of group A strep cases and acute self-limiting glomerulonephritis kidney disease) can be serious.

Infectiousness:

1. Strep is most contagious a day or two before the rash and 4-5 days after (corresponding to presence of fever).
2. Children without a rash are just as contagious and can develop the same complications.
3. About 10% of persons are healthy carriers of group A strep; they are contagious.
4. For most cases of strep infection, the source or time of exposure is not determined.

Treatment:

1. Refer for diagnosis by rapid strep test and culture.
2. If strep culture positive, monitor for a completed course of antibiotic (usually penicillin) therapy to prevent complications and spread of infection.
3. For undiagnosed cases (milder sore throat, low fever) treat symptomatically.
4. Children may return to school 24 hours after beginning antibiotic therapy.
5. Monitor for complications (high fever, joint pain, blood in the urine) and refer immediately.
6. P.E. return: if uncomplicated, may participate fully with school physical activity upon return. ⁽⁸⁾

Tuberculosis

Cause:

Tuberculosis (TB) is a contagious bacterial disease caused by the tubercle bacilli *Mycobacterium tuberculosis*. It can affect any organ of the body-although most commonly affects the respiratory tract. TB is spread through airborne transmission. Therefore, if a person infected with TB coughs, sneezes, or spits, and releases infected droplets of mucous these may be picked up by a non-infected person who then develops TB. These droplets remain viable and suspended in the air for several hours. Kissing or sharing utensils or other objects, such as books or clothing, does not spread TB. The primary stage of the infection is usually asymptomatic. Two weeks after beginning anti-TB medications, most adults no longer transmit the organism. The disease is characterized by the development of granular tumors in the infected tissues.

Signs/Symptoms:

1. Initially asymptomatic, or limited to minor cough or mild fever
2. Fatigue
3. Weight loss
4. Blood-tinged sputum
5. Fever and night sweats
6. Difficulty breathing
7. Positive PPD and a chest e-ray that is normal or reveals only granulomas or calcifications in the lung or lymph nodes

TB can lay dormant in the body for years before the disease becomes apparent. Adults and children who are more likely to progress from infection to disease include those with recent contact, immunosuppression, HIV infection or immigrants. The most common symptom is a cough, often one that lasts for weeks, and there may be a productive cough that has blood in the mucous.

Interpretation of the results depends on the size of the raised or indurated area at the site of the PPD test, typically the forearm. A reactive PPD develops a red, swollen area (induration) at the approximate area of test administration, and occurs within 48 hours of test administration. A reactive area greater than or equal to 10mm is considered positive for infection. For groups at high risk of infection, an induration greater than or equal to 5mm is considered positive. Diagnosis is confirmed by chest x-ray. Groups at high risk for TB infection and disease include:

1. Foreign-born persons from high-incidence countries;
2. Poor and indigent persons, especially in large cities;
3. Persons known to have or suspected of having HIV infection
4. Close contacts of a person with infectious TB;
5. Present and former residents of correctional institutions;
6. Homeless persons;
7. Injecting drug users;
8. Health care workers caring for high-risk patients; and
9. Children exposed to high-risk adults

If foreign immunization records indicate the child has received “BCG” vaccines, the PPD is always positive. (Mexico is one of the foreign countries that give their infants BCG)

Treatment

Individuals diagnosed with a TB infection may be treated with oral anti-TB medication to prevent the infection from progressing to disease. Medication is usually taken once daily for approximately 6 months. Hospitalization may be indicated to prevent the spread of disease until the contagious period has resolved on drug therapy. After the contagious period has resolved, normal activity may be resumed.

School Attendance Guidelines

Students or school personnel diagnosed with suspected or confirmed TB disease should not attend or work in schools until they have begun taking prescribed anti-TB medications and their health care provider states, in writing, that they are no longer contagious (usually within two weeks of beginning medication).

Students or school personnel who have a positive TB skin test only (with a normal chest X-ray and no symptoms) do not have TB and are not contagious and should not be restricted in any way. ⁽⁴⁾

School Screening for TB

Mass screening of children for tuberculosis is no longer recommended. [KRS 214.034](#) was amended effective July 15, 1998. ⁽¹¹⁾ This revised statute effectively deleted the requirement that children be tested for tuberculosis. The statute also deleted the requirement that each child-entering public school have proof of having been tested for tuberculosis prior to enrollment. This is a new revision of the TB policy. The new recommendation is to screen children for TB with a questionnaire ([Exhibit 5E](#)) to determine if they are high risk (one “yes” answer on the questionnaire) and refer children who are screened as high risk to their health care provider or local health department for further evaluation. Children should remain in school while the results of their evaluation are pending. This change reflects the current position and practice of:

- Centers for Disease Control and Prevention
- U.S. Department of Health & Human Services
- American Academy of Pediatrics
- Infectious Disease Society of America⁽⁴⁾

Prevention Guidelines

- Develop a policy, in consultation with the local health department, for responding to cases of communicable disease. (Exhibit 5F)⁽¹²⁾
- Every effort should be made to adequately educate the community through a joint effort by the schools, local health department, and the Kentucky Department for Public Health, when a case of TB disease occurs within the school population.